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2. I have had the opportunity of reviewing the sworn translation (Exhibit "A" hereto) of Gebrauchsmuster ("utility model") G 93 05 552.8 of the Federal Republic of Germany (Exhibit "B" hereto), filed April 4, 1993 and supposedly "laid open" for public examination on or about July 15, 1993. The text of the Gebrauchsmuster, with seven claims, appears to be the same German text (group Exhibit "C" hereto) that appeared in the German application priority document which in the file history of EP 620,115 (B1) (also group Exhibit "C") was the subject of my Fifth Declaration and was printed and published, according to its cover, on October 19, 1994. I understand that the Gebrauchsmuster itself (Exhibit "A" hereto) was neither printed nor published on July 15, 1993, but from the representations (Exhibit "D" hereto) of Lars Manke, a German national patent agent and supposed "legal expert" on German utility models on behalf of PRI, the Gebrauchsmuster was "registered" on June 3, 1993, and the file of Gebrauchsmuster G 93 05 552.8 was "laid open" on July 15, 1993, and as the "registration" was published in the German official Patent Gazette as the unofficial utility model bulletin on July 15, 1993 (group Exhibit "E"), a copy of the Gebrauchsmuster could have been ordered on July 15, 1993.

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ordered on July 15, 1993, its claims - and its claims only - would be prior art to U.S. Patent No. 5,630,363. I also understand that some case law exists in the United States that while the specification and drawings of Gebrauchsmuster G 93 05 552.8 are not available as prior art, under such case law one may use the specification and drawings to fairly interpret the meaning of any relevant German claims. I understand that processes cannot be claimed in German Gebrauchsmustern. I have been asked to give my opinion if any of the claims of the Gebrauchsmuster meet the claim limitations of any of the claims of the pending reissue application or the issued '363 patent or put one of ordinary skill in the art in August 1995 in possession of the claimed invention of Claims 1-87 of the pending reissue application (Exhibit "F" hereto), or make the subject matter of these claims obvious to one of ordinary skill in the art.

4. I interpret Claims 1-4 and Claim 7 pertain to an article of manufacture ("device") with an end-of-press tower coater. I interpret Claims 5-6 as possibly referring to a device having an interstation or upstream tower coater. Of particular interest is the alternative of Claims 5 or 6 dependent on Claim 2, as opposed to Claim 1. I have reviewed Exhibit "A" and "B" and would like to make the following comments to the document, and specifically comment on Claims 5 and 6.

5. For the reasons that follow, none of the proposed reissue Claims 1-87 nor the underlying claims of the '363 are fairly taught by Claims 5-6 of the Gebrauchsmuster, or are obvious to one of ordinary skill in the art in view of said Claims 5-6 of the Gebrauchsmuster, whether or not the specification is available for interpretation of the claims.

6. First, the Gebrauchsmuster does not mention its application to the printing of metallic inks, and does not contain the text of the WIMS patent, U.S. Patent No. 5,370,976 to Doughty and Williamson, that would supply the motivation needed in the period of July 1993 - August 1995 for one to try going "up front" with a tower coater. The Gebrauchsmuster does not indicate the use of metallic inks in front of the lithographic unit.

7. Second, no detail is made of flexographic inks or plates. Indeed, Claims 5-6 do not mention an expected advantage of printing metallic inks (increased brilliance) or any other advantage. In fact, the Gebrauchsmuster does not describe the use of flexographic plate for the purpose of printing dots in front of the lithographic units.

8. Third, there is no mention of half-tone printing, only flood (possibly spot) coating of opaque whites. The Gebrauchsmuster (See Exhibits "A" and "B") does state the up front units will be used for printing opaque white. This is normally done for the reason of printing process color on


metalized foil. What is done is to lay white and then print process color via lithography on top of the opaque white.

9. Fourth, Claims 5-6 and the underlying specification do not teach, let alone mandate, interstation drying. In fact, the Gebrauchsmuster does not indicate how one would dry the flexographic ink prior to printing lithographic ink on top of it. The mention of drying in the last paragraph is simply insufficient. If attempted to be practiced on the opaque white mentioned in the Gebrauchsmuster, such a press containing an interstation flexographic tower would produce disastrous results - a mess. As applied by the device described in the Gebrauchsmuster, the process of Claim 5 or Claim 6 would be inoperable.

10. With the foregoing difficulties, including the lack of a teaching equivalent to WIMS '976 and the lack of a sufficient teaching of interstation drying, the Gebrauchsmuster does not place Claims 1-87 of the pending reissue application in possession of one skilled in the art as of August 1995, let alone July 1993. Said another way, if one were to read the Gebrauchsmuster claims in July 1993 or August 1995, one of skilled graphic arts knowledge would not be in possession of the Davis-Williamson '363 invention.

11. I note in passing from my former review of the Jesse Williamson, Gary Doughty and Harry Bowyer declarations, that Gebrauchsmuster G 93 05 552.8 Fig. 1, the substance of the last two paragraphs of the specification of said Gebrauchsmuster and Claim 5-6 of said Gebrauchsmuster clearly came from Jesse Williamson's statements to MAN-Roland at the end of May 1992.

The undersigned Declarant stated further that all statements made herein of Declarant's own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

  
\_\_\_\_\_  
Raymond J. Prince

Date: 12/5/2000

CHRISTIAN H.B. KÖNIG  
GERMAN TRANSLATION SERVICE

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November 20, 2000

I, Christian König, hereby swear, under penalty of perjury, that the attached document was translated by me and to the best of my knowledge and belief is a true and accurate translation of the corresponding German document:

**Gebrauchsmuster G 93 05 552.8**

(Christian König)

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(19) Federal Republic of Germany  
German Patent Office

(12) **Utility model**

U1 U

(11) Register number G 93 05 552.8  
(51) Main classification B41F 7 06  
Secondary classes B41F 5 24 B41F 31 06  
B41F 9 10 B41F 9 16  
B05C 1 08

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(47) Registration date June 3<sup>rd</sup>, 1993  
(43) Disclosure in Patent Gazette July 15<sup>th</sup>, 1993

(64) Subject matter  
Device for inline-coating of materials to be printed in offset printing presses.

(71) Name and residence of proprietor  
MAN Roland Druckmaschinen AG, 6050 Offenbach, DE

(74) Name and residence of representative  
Marek, J., Cert. Eng., Patent barrister, 6053 Obertshausen

Stamp:

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Device for inline-coating of materials to be printed in offset printing presses

The invention concerns a device for the coating of materials to be printed in multi-color offset printing presses with several coating stations.

The article "*Goldlackdruck löst Metall-Bronzierung ab*<sup>1</sup>" in the magazine *FlexoDruck*, 2-93, pages 42-43 describes the processing of gold lacquer in a multi-color offset printing press with two so-called coating towers. For this purpose, one of the coating towers was converted to a flexographic station, whereby a flexographic printing plate was used for coating, together with conventional lacquering technology. In regard to conventional metering methods for lacquer, the option of using a chamber doctor was pointed out.

DE 3 906 648 A1 describes an applicator unit for high-viscosity oil-based, or low-viscosity water-soluble layers. This applicator unit is configured as a coating unit, alternatively as an offset-, relief-, or intaglio-printing unit. These configurations are based on a textured pick-up roller, which is in contact with a doctor blade, or on an applicator roller and a textured form cylinder, which is in contact with a doctor blade. Hereby, the relief-printing unit consists of a pick-up roller that contains ink cells, and to which a doctor blade is assigned, a transfer roll, to which smoothing rolls are assigned, and a form cylinder that carries a relief form.

<sup>1</sup> Gold lacquer printing replaces metal-bronzing (The Translator)

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DE 4 122 990 A1 describes a bronze- and effect printing ink and a process for bronze- or effect printing. It describes a water-soluble printing ink of high viscosity and high pigment content. This ink is to be processed out of the coating station of an offset machine or out of a flexographic station. The short processing path with few ink separations is listed as an advantage.

A so-called chamber doctor for applying a coating material onto a coating roller is well known, e.g. from DE 3 614 582 A1. At least two doctor blades are in contact with a roller and form a chamber for accepting a material, which is supplied under pressure.

Object of the invention is to further develop a coating station according to the characterizing portion of claim 1, to allow in a simple manner the problem-free inline processing of quickly evaporating printing inks with high pigment content or rough pigments in combination with further subsequent printing- and coating processing steps.

This objective is solved by the characterizing portion of the independent claim. Further developments follow from the dependent claims.

This invention's solution makes it possible to carry out inline-coating in an offset printing press using high-viscosity liquids, with special consideration for water-based lacquers or pigmented inks (metallic gloss printing). Potential fields of application are the selective coating (spot coating) or the coating of complete areas. Evaporation of the employed liquids is reduced due to the closed design of the chamber of the chamber doctor. This improves the processing of quickly evaporating, e.g. water-soluble, liquids. The combination of several offset printing stations and at least one flexographic station can be implemented in various configurations, whereby as a rule an additional lacquering station, e.g. for the coating of solid areas, is positioned downstream of these devices.

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In the following, the invention is explained by way of example.

Fig. 1 shows a first installation for coating, and

Fig. 2 shows a variant of the coating installation.

Figure 1 shows a multi-color offset printing press with two lacquering stations. The offset printing press (shown here without the feeder- and delivery attachments) consists of five printing stations 1 to 5, connected thereto in sheet running direction a coating station configured as a flexographic station 6, and downstream thereof a conventional lacquering station 7. Hereby, the flexographic station 6 can be employed as a spot coating device (for selective lacquering) and the downstream lacquering station 7 can be employed for solid-area surface finishing.

The flexographic station 6, as well as the lacquering station 7, each consist of one impression cylinder 8.1, 8.2, one transfer drum 9.1, 9.2, and one form cylinder 10.1, 10.2.

A flexible relief printing plate, e.g. a flexographic printing plate, is mounted on the form cylinder 10.1 in the flexographic station 6. An applicator roller 11 with a surface textured with ink cells, a so-called anilox roller, is in contact with the form cylinder 10.1. A doctor chamber 12 is associated with, and can be positioned on, the applicator roller 11. The doctor chamber 12 can, for example, be equipped with a supply inlet for liquids centered on its top panel and with two discharging outlets for liquids in its lateral areas. The liquid-supply inlet is connected to a feed pump, while the liquid-discharge outlets 11 are connected to a suction pump. The pumps are required to be able to process a liquid that is of high viscosity due to the pigmentation, e.g. a water-based liquid, such as for example gold- and silver printing ink, opaque white, or lacquer.

The ink cells of the applicator roller 11 transport the coating material for the inking of the relief form to the form cylinder 10.1, where the coating material is applied to the material to be printed that is being fed by the impression cylinder 8.1. While the applicator roller 11 provides for the transport of liquids, the chamber doctor ensures that the liquid remains only in the ink cells.

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In contrast, the lacquering station 7 contains a roller pair that forms a metering nip. Herein, a metering roller 13 is positioned directly on an applicator roller 14. The coating substance is fed directly into the nip between the two rollers and is supplied to the form cylinder 10.2 by the applicator roller 14. At the impression cylinder 8.2, the form cylinder then applies the coating substance onto the material to be printed that is being supplied.

The staggered arrangement of offset printing, flexography, and lacquering yields very good operational results, especially in metal-gloss coatings. Hereby one must emphasize the combination of rapid processing of the quickly-evaporating metallic printing ink or printing lacquer and the subsequent coating with lacquer, which improves the gloss.

Fig. 2 shows a similar system. Here, the flexographic station 6 is employed upstream of the first printing station 1 of the offset printing press. Using such a configuration, it is possible to apply base-coatings prior to printing, e.g. opaque white coatings on sheet metal, plastic film, or card stock. Furthermore, the final lacquering can be achieved by placing a lacquering station 7 downstream of the final printing station 5, or by arranging an integrated lacquering unit with a conventional printing station.

Also comparable<sup>2</sup> is a placement of the flexographic station 6 within the offset printing press for applying intermediary coatings, for instance including a drying function.

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<sup>2</sup> The German original suffers from poor grammar, which makes a determination of the exact meaning impossible. This interpretation assumes the German 'Vergleich' is meant to read 'Vergleichbar'. (The Translator).

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Claims

- 1.) Device, preferably in sheet-fed rotary printing presses for multi-color offset printing for the coating of materials to be printed containing at least two lacquering stations,  
whereby  
each lacquering station comprises one impression cylinder (8), one form cylinder (10), and one applicator roller (11, 14), and the lacquering station that is upstream with respect to the sheet running direction is configured as a flexographic station (6).
- 2.) Device according to claim 1 wherein  
the flexographic station (6) is equipped with an applicator roller (11), with which is associated an adjustable chamber doctor (12), whereby the applicator roller (11) is configured as an anilox roller.
- 3.) Device according to claim 1 and 2 wherein  
a conventional lacquering station (7) is located directly or indirectly downstream of the flexographic station (6), and the lacquering station (7) is equipped with an applicator roller (14), with which is associated an adjustable metering roller (13) to form a common metering nip.
- 4.) Device according to claims 1 and 2 wherein  
the flexographic station (6) consists of the following elements:  
the form cylinder (10.1), which carries a relief form and is in contact with the impression cylinder (8.1), the applicator roller (11) with screen texture, which is in contact with the form cylinder (10.1), and the chamber doctor, which is equipped with a feed pump for liquid supply and a suction pump for liquid return.

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- 5.) Device according to claims 1 and 2 wherein the flexographic station (6) in an offset printing press is placed in between the printing stations (1-5).
- 6.) Device according to claims 1 and 2 wherein the flexographic station (6) in an offset printing press is placed upstream of the printing stations (1-5).
- 7.) Device according to claims 1 and 2 wherein the flexographic station (6) in an offset printing press is placed downstream of the printing stations (1-5).

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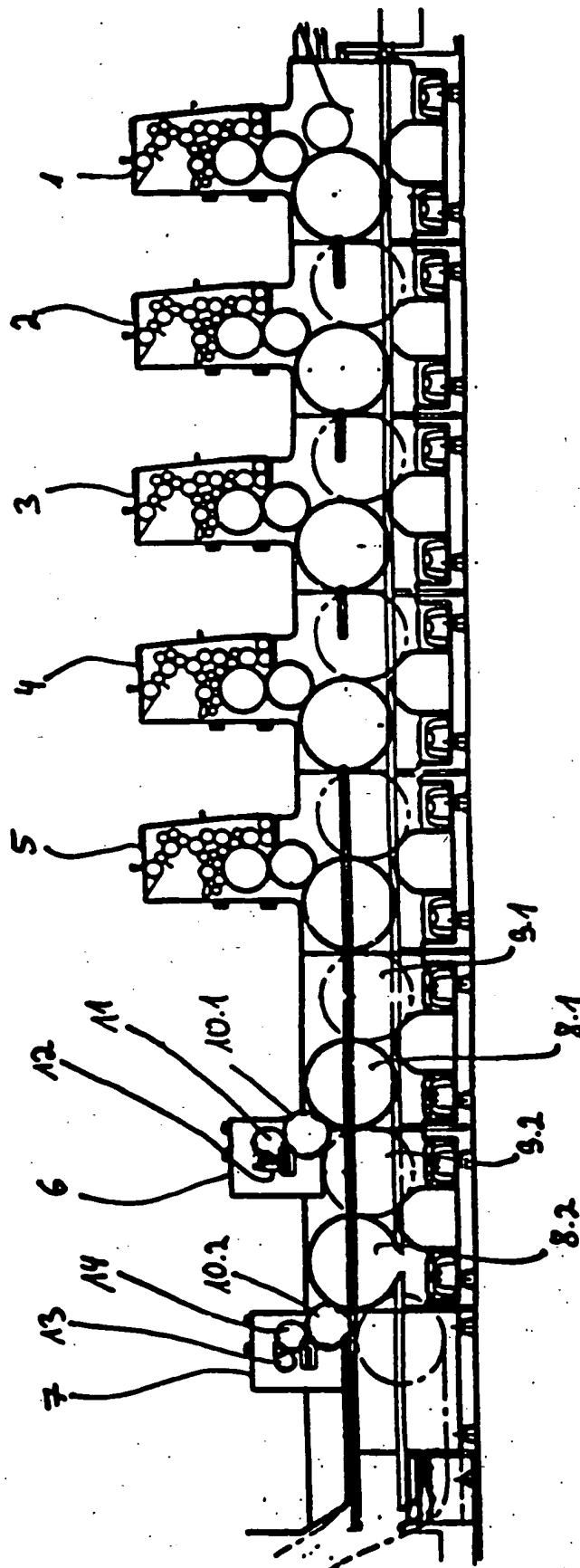


Fig. 1

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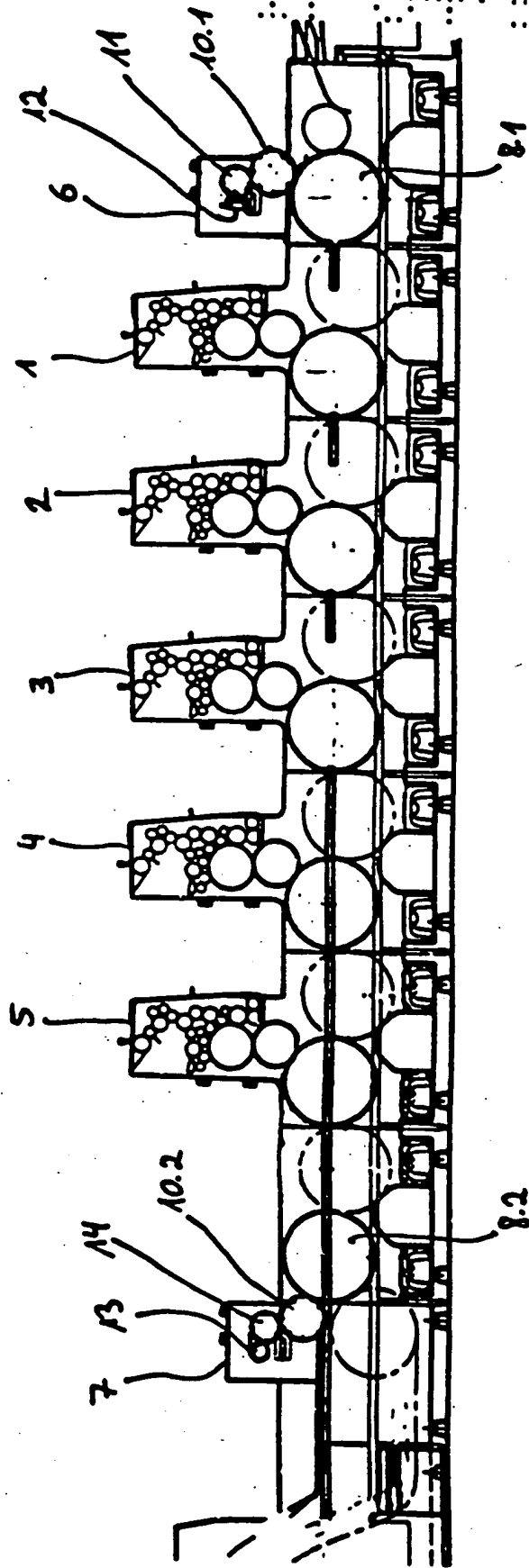


Fig. 2

19 BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT



12 Gebrauchsmuster

U1

(11) Rollennummer G 93 05 552.8

(51) Hauptklasse B41F 7/06

Nebenklasse(n) B41F 5/24

B41F 9/10

B05C 1/08

B41F 31/06

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(22) Anmeldetag 16.04.93

(47) Eintragungstag 03.06.93

(43) Bekanntmachung  
im Patentblatt 15.07.93

(54) Bezeichnung des Gegenstandes  
Einrichtung zum Inline-Beschichten von  
Bedruckstoffen in Offsetdruckmaschinen

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MAN Roland Druckmaschinen AG, 6050 Offenbach, DE

(74) Name und Wohnsitz des Vertreters  
Warek, J., Dipl.-Ing., Pat.-Ass., 6053  
Obertshausen

MAN Roland Druckmaschinen AG

Christian-Pleß-Str. 6-30, 6050 Offenbach/Main

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Einrichtung zum Inline-Beschichten von Bedruckstoffen in Offsetdruckmaschinen

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Die Erfindung betrifft eine Einrichtung zum Beschichten von Bedruckstoffen in Mehrfarben-Offsetdruckmaschinen mit mehreren Lackierwerken.

In der Zeitschrift FlexoDruck, 2-93, Seite 42-43, ist im Artikel "Goldlackdruck löst Metall-Bronzierung ab" angegeben, daß in einer Mehrfarben-Offsetdruckmaschine mit zwei sogenannten Lacktürmen eine Goldlackfarbe verarbeitet wurde. Dazu wurde ein Lackturm als Flexodruckwerk umgerüstet, wobei mit konventioneller Lackiertechnik eine Flexodruckplatte zum Beschichten eingesetzt wurde. Gegenüber der konventionellen Lackdosierung wurde auf die Option zur Verwendung eines Kammerrakels hingewiesen.

Ein Auftragswerk für hochviskose, ölhaltige oder niedrigviskose wasserlösliche Schichten ist aus der DE 3 906 648 A1 bekannt. Dieses Auftragswerk ist als Lackiereinrichtung, wahlweise als Offset-, Hochdruck- oder Tiefdruckwerk ausgebildet. Die Ausführungen gehen von einer strukturierten Schöpfwalze aus, die mit einem Rakelblatt korrespondierend bzw. von einer Auftragwalze und einem strukturierten Formzylinder, der mit einem Rakelblatt korrespondiert. Das Hochdruckwerk besteht dabei aus einer mit Nöpfchen profilierten Schöpfwalze, der ein Rakelblatt zugeordnet ist, einer Übertragwalze, der Glättwalzen zugeordnet sind und einem Formzylinder mit Hochdruckform.

Aus der DE 4 122 990 A1 sind eine Bronze- und Effektdruckfarbe und ein Verfahren zur Herstellung eines Bronze- und Effektdruckes

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bekannt. Dort wird eine wasserverdünnbare Druckfarbe mit hoher Viskosität und hohem Pigmentanteil beschrieben. Diese soll aus dem Lackwerk einer Offsetmaschine oder einem Flexodruckwerk verarbeitet werden. Als Vorteil wird der kurze Verarbeitungsweg mit wenigen Farbspaltungen angegeben.

Beispielsweise aus der DE 3 614 582 A1 ist ein sogenanntes Kammer-  
raket zum Auftragen einer Beschichtungsmasse auf eine Beschich-  
tungswalze bekannt. Mindestens zwei, an einer Walze anliegende,  
Raketblätter bilden eine Kammer zur Aufnahme einer Masse, die unter  
Druck zugeführt wird.

Aufgabe der Erfindung ist es, eine Beschichtungseinrichtung nach  
dem Oberbegriff des Anspruchs 1 weiterzuentwickeln, um auf einfache  
Weise eine problemlose Inline-Verarbeitung von schnellverdunstenden  
Druckfarben mit hohem Pigmentanteil bzw. groben Pigmenten kombi-  
niert mit weiterbehandelnden Druck- oder Beschichtungsvorgängen zu  
ermöglichen.

Gelöst wird die Aufgabe durch den kennzeichnenden Teil des Haupt-  
anspruches. Weiterbildungen ergeben sich aus den Unteransprüchen.

Die erfindungsgemäße Lösung gestattet es, das Inline-Beschichten  
mit höherviskosen Flüssigkeiten in einer Offsetdruckmaschine  
vorzunehmen unter besonderer Berücksichtigung von Lacken bzw.  
pigmentierten Farben auf Wasserbasis (Metallglanzdrucke). Einsatz-  
gebiete bestehen für ausgespartes Lackieren (Spotlackierung) oder  
vollflächiges Lackieren. Aufgrund der geschlossenen Kammer beim  
Kammerraket wird die Verdunstung der verwendeten Flüssigkeit  
reduziert. Dadurch wird die Verarbeitung von schnell verdunstenden,  
z.B. wasserlöslichen Flüssigkeiten verbessert. Die Kombination von  
mehreren Offsetdruckwerken und mindestens einem Flexodruckwerk kann  
in unterschiedlichen Anordnungen erfolgen, wobei diesen Einrich-  
tungen in der Regel eine weitere Lackiereinrichtung, z.B. zum  
vollflächigen Lackieren, nachgeordnet ist.

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Die Erfindung wird im Folgenden beispielhaft erläutert. Dabei zeigt

Fig. 1 eine erste Einrichtung zum Beschichten und

Fig. 2 eine Variante der Einrichtung zum Beschichten.

In Figur 1 ist eine Mehrfarben-Offsetdruckmaschine mit zwei Lackiereinrichtungen gezeigt. Die Offsetdruckmaschine (hier ohne An- und Ausleger) besteht aus fünf Druckwerken 1 bis 5, daran in Bogenlaufrichtung angeschlossen einer als Flexodruckwerk 6 ausgerüsteten Beschichtungseinrichtung und einer dieser nachgeordneten herkömmlichen Lackiereinheit 7. Dabei kann das Flexodruckwerk 6 als Spotlackiereinrichtung (für ausgespartes Lackieren) und die nachgeordnete Lackiereinheit 7 zum vollflächigen Oberflächenfinishing eingesetzt werden.

Die Flexodruckwerk 6 wie auch die Lackiereinheit 7 bestehen aus je einem Druckzylinder 8.1, 8.2, einer Transfertrommel 9.1, 9.2 und einem Formzylinder 10.1, 10.2.

In der Flexodruckwerk 6 ist auf den Formzylinder 10.1 eine flexible Hochdruckplatte aufgespannt, zB. eine Flexodruckplatte. In Kontakt mit dem Formzylinder 10.1 ist eine Auftragwalze 11 mit strukturierter Oberfläche mit Rasternäpfchen, eine sogenannte Rasterwalze, angeordnet. An die Auftragwalze 11 anstellbar ist dieser ein Kammerrakel 12 zugeordnet. Das Kammerrakel 12 kann zB. an seiner Oberseite mittig mit einem Flüssigkeitszulauf und zwei austretende Flüssigkeitsabläufen im Bereich der Seitenteile versehen sein. Der Flüssigkeitszulauf ist mit einer Förderpumpe, die Flüssigkeitsabläufe 11 hingegen mit einer Saugpumpe verbunden. Die Pumpen sind erforderlich, um speziell durch die Pigmentierung höherviskose Flüssigkeit z.B. auf Wasserbasis, wie z.B. Gold- und Silberdruckfarbe, Deckweiß oder Lack, verarbeiten zu können.

Über die Rasternäpfchen der Auftragwalze 11 wird die Beschichtungsmasse zum Einfärben der Hochdruckform auf den Formzylinder

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# D E B I T O R S

Durch die Staffelung Offsetdruck, Flexodruck und Lackieren ist speziell für Metallglanz-Beschichtungen ein besonders gutes Arbeitsergebnis erzielbar. Dabei ist die Kombination von schneller Verarbeitung der leicht verdunstenden Metalldruckfarbe bzw. des Drucklacks mit einer nachträglichen, den Glanz erhöhenden Lackbeschichtung hervorzuheben.

Vergleich ist auch eine Anordnung des Flexodruckwerkes 6 innerhalb der Offsetdruckmaschine zum Ausbringen von Zwischenbeschichtungen etwa mit Trocknungsfunktion.

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# Ansprüche

- 1.) Einrichtung vorzugsweise in Bogenrotationsdruckmaschinen für mehrfarbigen Offsetdruck zum Beschichten von Bedruckstoffen mit wenigstens zwei Lackiereinheiten,  
dadurch gekennzeichnet,  
daß jede Lackiereinheit einen Druckzylinder (8), einen Formzylinder (10) und eine Auftragwalze (11,14) enthält und die entsprechend Bogenlaufrichtung vorgeordnete Lackiereinheit als Flexodruckwerk (6) ausgebildet ist.
- 2.) Einrichtung nach Anspruch 1,  
dadurch gekennzeichnet,  
daß im Flexodruckwerk (6) eine Auftragwalze (11) vorgesehen ist, an die ein Kammerrakel (12) anstellbar angeordnet ist, wobei die Auftragwalze (11) als Rasterwalze ausgebildet ist.
- 3.) Einrichtung nach Anspruch 1 und 2,  
dadurch gekennzeichnet,  
daß dem Flexodruckwerk (6) eine konventionelle Lackiereinheit (7) direkt oder indirekt nachgeordnet ist und in der Lackiereinheit (7) eine Auftragwalze (14) vorgesehen ist, der eine Dosierwalze (13) zur Bildung eines gemeinsamen Dosierspaltes anstellbar zugeordnet ist.
- 4.) Einrichtung nach Anspruch 1 und 2,  
dadurch gekennzeichnet,  
daß das Flexodruckwerk (6) aus folgenden Elementen besteht:  
dem, eine Hochdruckform tragenden Formzylinder (10.1), der mit dem Druckzylinder (8.1) in Kontakt steht, der Auftragwalze (11) mit Rasterstruktur, die mit dem Formzylinder (10.1) in Kontakt steht und dem Kammerrakel (12) besteht, das mit einer

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Förderpumpe zur Flüssigkeitszufuhr und einer Saugpumpe zur Flüssigkeitsrückführung verbunden ist.

- 5.) Einrichtung nach Anspruch 1 und 2,  
dadurch gekennzeichnet,  
daß das Flexodruckwerk (6) in einer Offsetdruckmaschine  
zwischen den Druckwerken (1-5) angeordnet ist.
- 6.) Einrichtung nach Anspruch 1 und 2,  
dadurch gekennzeichnet,  
daß das Flexodruckwerk (6) in einer Offsetdruckmaschine den  
Druckwerken (1-5) vorgeordnet ist.
- 7.) Einrichtung nach Anspruch 1 und 2,  
dadurch gekennzeichnet,  
daß das Flexodruckwerk (6) in einer Offsetdruckmaschine den  
Druckwerken (1-5) nachgeordnet ist.

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PATENT NO EP (UK) **0620115**

TRANSLATION OF EUROPEAN PATENT (UK)  
UNDER SECTION 77 (6) (a)

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Patents Act 1977  
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2. European patent number or publication  
number of application (or International  
publication number (see note (e))) 0620115

3. Full name and address of the or of each  
applicant for or proprietor of the  
European patent (UK)

MAN Roland Druckmaschinen AG, Mühlheimer Strasse 341  
D-63075 Offenbach, Germany

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(If so then write 'YES') YES

8. Signature Date

9th October 1996

9. Name and daytime telephone number of  
person to contact in the United Kingdom

GALLAFENT & CO  
0171 242 3094

PATENTS ACT 1977

In the matter of  
European Patent (UK)  
0620115

DECLARATION

I, Richard John Gallafent, a Chartered Patent Agent, of 9  
Staple Inn, London WC1V 7QH, declare that I am the  
translator of the document attached and certify that it  
is a true translation to the best of my knowledge and  
belief of the final text in European Patent Application  
94103832.5, which is to be granted as European Patent  
0620115.

  
RICHARD JOHN GALLAFENT

  
DATE

W018707

The invention relates to a device for coating material to be printed in multi-colour offset printing presses with multiple varnishing units (see, e.g. DE-A-3941571).

In the Journal FlexoPrint 2-93, pages 42-43, it is stated in the article "Gold varnish print replaces metal bronzing" that in a multi-colour offset printing press with two so-called varnish towers, a gold varnish ink was processed. For this, one varnish tower was converted to be a flexoprint unit, wherein using conventional varnishing technology, a flexo printing plate is used for coating. In contrast to the conventional varnish metering, attention is directed to the option of using a comb doctor.

An application unit for highly viscous oil-containing or low viscous water-soluble layers is known from DE 3 906 648 A1. This applicator unit is constructed as a varnish device, according to choice as offset, relief or intaglio print unit. The embodiments start out from a structured scoop roller which correspondingly with a doctor blade or by means of an applicator roller and a structured forme cylinder which corresponds with a doctor blade. The letterpress printing unit consists in this connection of a scoop roller profiled with little depressions to which a doctor blade is arranged, a transfer roller to which smoothing rollers are arranged and a forme cylinder with a relief forme.

From DE 4 122 990 A1, a bronzing and effect printing ink and a process for manufacturing a bronzing and effect print are known. There a water-thinnable printing ink of high viscosity and high pigment content is described. This should be processed from the varnishing unit of an offset press or a flexo printing unit. Given as an advantage is the short working path with few ink splittings.

Known, for example, from DE 3 614 582 A1 is a so-called chamber doctor for applying a coating composition to a coating roller. At least two doctor blades lying against a roller form a chamber for the receipt of a composition which is fed in under pressure.

It is the object of the invention further to develop a coating device of the type known, e.g. from the document DE-A-3941571 in order, in simple fashion, to make possible problem-free in-line operation with rapidly evaporating aqueous printing inks or printing varnishes with a high pigment content or coarse pigments combined with further treating, printing or coating processes.

The problem is solved by the features of the main claim. Further developments are evident from the sub-claims.



The solution in accordance with the invention permits the in-line coating with higher viscosity liquids to be undertaken in an offset printing press with particular reference to varnishes or pigmented inks on an aqueous basis (metallic effect print). Areas of application consist in separate area varnishing (spot varnishing) or full surface varnishing. Because of the closed chamber at the chamber doctor, the evaporation of the liquid used is reduced. Thereby processing rapidly evaporating, e.g. water-soluble liquids, is improved. The combination of several offset printing units and at least one flexo printing unit can result in differing arrangements, wherein with respect to this unit as a rule a further varnishing unit, e.g. for full surface varnishing, is installed downstream.

The invention is explained by way of example in what follows. In this connection

Fig. 1 shows a first device for coating and

Fig. 2 a variant of the device for coating.

In Figure 1, a multi-colour offset printing press with two varnishing units is shown. The offset printing press (here without feeder and delivery) consists of five printing units 1 to 5, then afterwards in the sheet running direction a coating unit equipped as a flexo print unit 6 and arranged after this a customary varnishing unit 7. In this connection, the flexo print unit 6 can be used as a spot varnishing unit (for separate area varnishing) and the subsequently arranged varnishing unit 7 for full surface surface finishing.

The flexo print unit 6 as well as the varnishing unit 7 also consists in each case of a impression cylinder 8.1, 8.2 a transfer drum 9.1, 9.2 and a forme cylinder 10.1, 10.2.

In the flexo print unit 6, a flexible relief printing plate is tensioned on to the forme cylinder 10.1, e.g. a flexo print plate. In contact with the forme cylinder 10.1 is arranged an applicator roller 11 with a structured surface with a grid of little depressions, a so-called raster roller. Settable against the applicator roller 11 there is a chamber doctor 12 arranged relative to this. The chamber doctor 12 can, e.g. be provided at its upper side centrally with a liquid feed and two outlet liquid drains in the region of the side parts. The liquid feed is connected with a feed pump, the liquid outlets 11 in contrast with a suction pump. The pumps are necessary in order to be able to work particularly with liquid of high viscosity because of pigmentation, e.g. on an aqueous basis, such as, e.g. gold and silver printing inks, cover white or varnish.

The coating composition for inking up the relief print form on the forme cylinder is transported via the raster depressions of the applicator roller 11 and applied on to the material to be printed fed from the impression cylinder 8.1. During the liquid transport effected by the applicator roller 11, the chamber doctor 12 takes care that the liquid remains exclusively in the raster depressions.

The varnishing unit 7 has in contrast a pair of rollers to form a metering slot. In this connection, a metering roller 13 is set against an applicator roller 14. The coating composition is fed directly into the slot between both rollers and fed via the applicator roller 14 to the forme cylinder 10.2. This then applies it at the impression cylinder 8.2 on to the material to be printed which is fed in.

By the staggered arrangement of offset printing flexo printing and varnishing, especially for metal gloss coatings a particularly good working result can be achieved. In this connection, the combination of rapid working of the easily evaporating metal printing inks or the printing lacquers with a subsequent gloss-enhancing varnish coating is to be recommended.

A comparable system is illustrated in Figure 2. Here the flexo print unit 6 is put prior to the first printing unit 1 of the offset printing press. With this sort of configuration, basic coats can be applied before printing, e.g. cover white coatings on to sheet material, plastics, foils or card. The final varnishing can furthermore be made possible in that a varnishing unit 7 is arranged after the last printing unit 5 or also an integrated varnishing unit is arranged on a conventional printing unit.

Also comparable is an arrangement of the flexo print unit 6 within the offset printing press for the application of intermediate coatings and if needed with a drying function.

Patent claims

- 1) Device in a rotary printing press for multi-colour offset printing for coating material to be printed with at least two varnishing units, wherein each varnishing unit has an impression cylinder (8), a forme cylinder (10) and an applicator roller (11, 14), and the varnishing unit arranged upstream corresponding to the sheet running direction is constructed as a flexo print unit (6), wherein the flexo print unit (6) consists of the following elements:  
a relief forme carrying forme cylinder (10.1) which is in contact with the impression cylinder (8.1), an applicator roller (11) with a raster structure, which is in contact with the forme cylinder (10.1) and a settable-on chamber doctor (12) which is connected with a feed pump for liquid feed and a suction pump for liquid return wherein directly or indirectly arranged after the flexo print unit (6) is a varnishing unit (7) and wherein in the varnishing unit (7) an applicator roller (14) is provided relative to which a metering roller (13) is arranged to form a common metering slot.
- 2) Device according to Claim 1, characterised in that the flexo print unit (6) is arranged in an offset printing press between the printing units (1-5).
- 3) Device according to Claim 1, characterised in that the flexo print unit (6) is arranged in an offset printing press prior to the printing units (1-5).
- 4) Device according to Claim 1, characterised in that the flexo print unit (6) is arranged in an offset printing press subsequent to the printing units (1-5).

FOE250" 96/5TE60

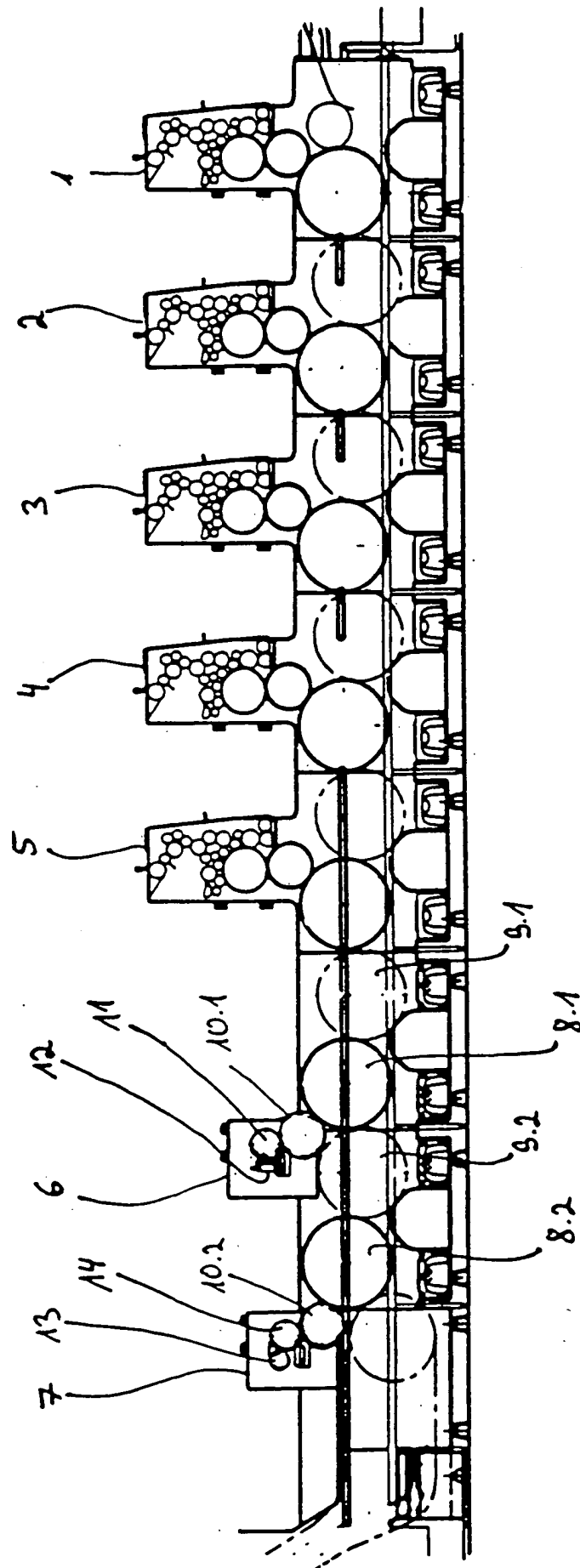


Fig. 1

W018712

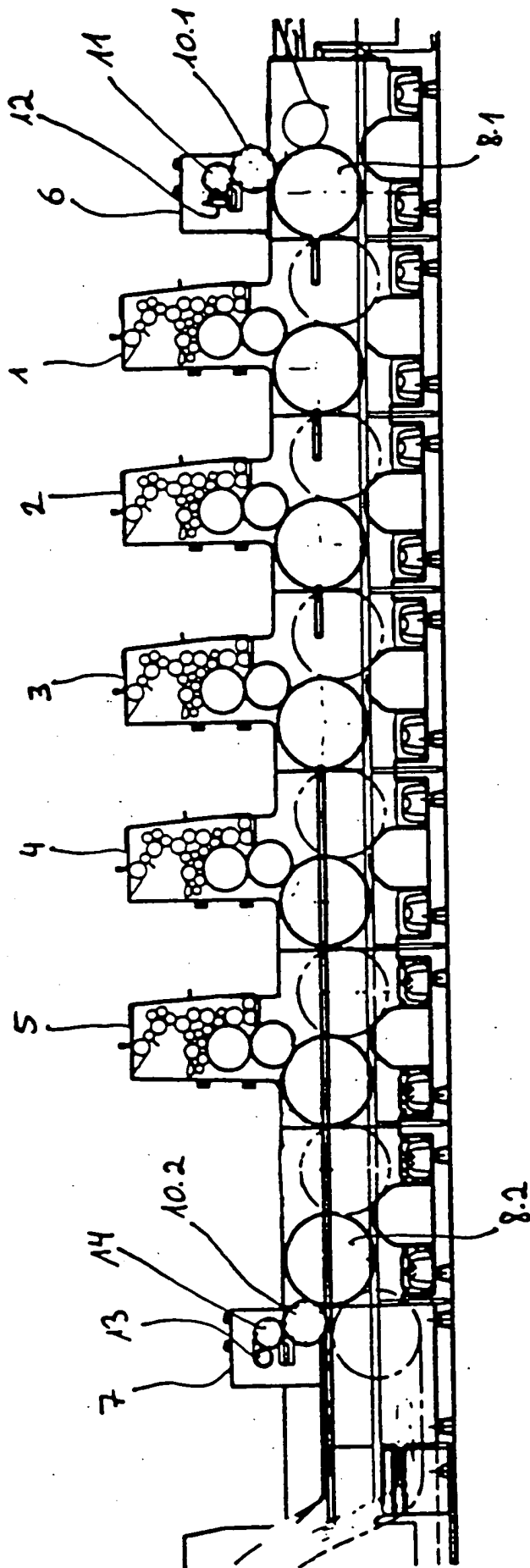


Fig. 2

LEGAL EXPERT'S REPORT  
ON GERMAN UTILITY MODELS

My name is Lars Manke and my curriculum vitae is attached. I am a partner with the patent law firm UEXKÜLL & STOLBERG and have 8 years experience in patent law and utility model law. I have been retained as an expert of witness by the law firm of LOCKE, LIDELL and SAPP. My compensation is \$ 200 per hour.

I, Lars Manke, hereby declare that:

In general, German utility models (Gebrauchsmuster) are similar to German patents. Like German patents, a German utility model contains a description, claims and drawings (no abstract is required). The maximum lifetime of a German utility model is 10 years, instead of 20 years for a German patent. Further, the definition of "inventive step" is slightly different.

Contrary to a German patent, a German utility model does not go through substantive examination but is registered upon passing the formal examination. Usually, the registration occurs between two and three month after the date of filing. The date of registration is published in the official PATENT GAZETTE (Patentblatt) and in the unofficial UTILITY MODEL BULLETIN (Auszüge aus den Gebrauchsmustern).

The publication of the unofficial UTILITY MODEL BULLETIN occurs on the same day the registration of the utility model is published in the official PATENT GAZETTE.

The publication of the registration of a German utility model in the official PATENT GAZETTE does not contain explicit

RECEIVED - 9/15/50

details on the subject matter of the utility model; it shows the bibliographic data. The PATENT GAZETTE is the official publication of the German Patent and Trademark Office, and is printed by a publisher (Carl Heymanns Verlag) in Munich.

The unofficial UTILITY MODEL BULLETIN is printed and published by another publisher (WILA Verlag) in Munich. The UTILITY MODEL BULLETIN contains more detailed information, i.e. a drawing and claim 1 of the respective utility model.

Generally, both publications may be ordered directly from the publishers by any third party for whichever purposes. The PATENT GAZETTE is printed with a volume of approximately 700 copies per week, the UTILITY MODEL BULLETIN only with a volume of approximately 80 per week.

The unofficial UTILITY MODEL BULLETIN is available to the public through at least the German Patent Office, through the "Bayrische Staatsbibliothek" (Bavarian State Library) in Munich and through the "Deutsche Bibliothek" (German Library) in Frankfurt. Further, about 60 to 70 companies and law firms order the UTILITY MODEL BULLETIN for own inspection purposes.

The official PATENT GAZETTE is available to the public through several universities and other institutions who order the PATENT GAZETTE for own inspection purposes.

The German utility model G 93 05 552.8 with the German title "Einrichtung zum Inline-Beschichten von Bedruckstoffen in Offsetdruckmaschinen" (English title: "Device for in-line coating of printed materials in printing machines") has been filed on April 16, 1993. The date of registration was June 3, 1993. The registration has been published in the official PATENT GAZETTE and in the unofficial UTILITY MODEL BULLETIN on July 15, 1993.

09345796 052301

From the date of the registration (June 3, 1993) of the above German utility model, a list was available at the German Patent Office, on which the publication number, the main class and the date of registration of all German utility models are cited which have been registered at that day (June 3, 1993) including the publication number, the main class and the date of registration of the utility model in question.

From the above date of registration, any third party had the opportunity to file a request for inspection of file for the utility model in question. This means, from the date of registration (June 3, 1993), any third party had the opportunity to get knowledge of the content of the above utility model in question.

As already mentioned, the publication of the registration of a German utility model in the official PATENT GAZETTE and the unofficial UTILITY MODEL BULLETIN occurs a few weeks after the registration thereof. This date of the publication of the registration (July 15, 1993) was the day when the above utility model was open to the public and could be inspected by any third party. There is no printed copy of the German utility model, but is on microfiche. However, any third party had the opportunity to order a printed copy of the whole specification of the above utility model from the German Patent and Trademark Office.

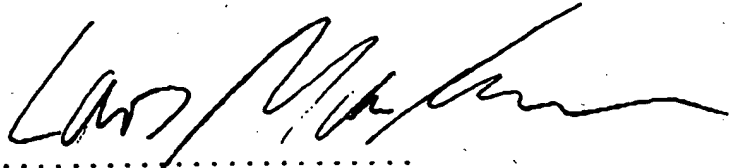
The above declaration and any oppinions herein are based on my knowledge of the German utility model law ("Gebrauchsmuster-gesetz"), my experience as a German patent attorney, my German patent practice, my knowledge of the German Patent Office and my knowledge of Carl Heymanns Verlag and WILA Verlag. I have not testified or given a deposition for the last four years.

0931596 0501



Attachments to this report are German utility model G 93 05 552.8, the mention of registration of the utility model in the PATENT GAZETTE and the unofficial UTILITY MODEL BULLETIN published July 15, 1993. It is expected that an English translation of the German utility model G 93 05 552.8 will be available in a supplement.

Munich, November 16, 2000



.....  
(Lars Manke)

0315796-032301  
FOUO "SAFE"

# LARS MANKE

## Curriculum Vitae

### Personal Data:

Date of Birth: June 19, 1965 in Oldenburg, Germany

Address: Amalienstraße 40, 80799 Munich, Germany

### Education and Professional Experience:

- 1987 - 1992: University of Braunschweig (Diploma in Electrical Engineering)
- 1992 - 1993: Research and Development at VOLKSWAGEN in Braunschweig
- 1993 - 1995: Education at UEXKÜLL & STOLBERG, Patent Attorneys in Hamburg
- 1995 - 1996: Industrial Property Study Program organized by the German Patent and Trademark Office
- 1996 - 1999: Associate at UEXKÜLL & STOLBERG, Patent Attorneys in Hamburg
- since 1996: Registered to practice before the German Patent and Trademark Office
- since 1996: Registered to practice before the Federal Court
- since 1996: Registered to practice before the European Community Trademark Office
- since 1998: Registered to practice before the European Patent Office
- since 2000: Partner at UEXKÜLL & STOLBERG, Patent Attorneys in Munich

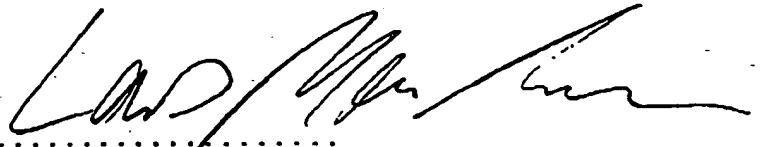
### Member:

- German Patent Attorney Bar Association of German Patent Attorneys
- Institute of Professional Representatives before the European Patent Office (EPI)
- International Federation of Industrial Property Attorneys (FICPI)
- German Association for the Protection of Industrial Property and Copyright Law (GRUR)
- International Association for the Protection of Industrial Property (AIPPI)

09315796-052301

Lars Manke is a partner at UEXKÜLL & STOLBERG, Patent Attorneys. He has 8 years of practice in intellectual property law, beginning with his education at UEXKÜLL & STOLBERG, one of the leading patent law firms in Germany. Since one year he is a partner at UEXKÜLL & STOLBERG and founded the branch office in Munich. His practice consists primarily of preparation and prosecution of patent applications, utility model applications and trademark applications before the German Patent Office and the European Patent Office. Other areas of his expertise include patent and trademark licensing and counseling clients regarding all phases of intellectual property.

Munich, November 16, 2000

  
.....  
(Lars Manke)

09345796-052301

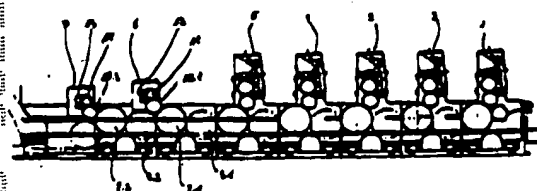
atomen oder ein Terpolymeres von Ethylen und Propylen und Butylen oder Ethylen und Propylen und einem anderen  $\alpha$ -Olefin mit 5 bis 10 Kohlenstoffatomen oder eine Mischung aus zwei oder mehreren der genannten Homo-, Co- und Terpolymeren oder ein Blend aus zwei oder mehreren der genannten Homo-, Co- und Terpolymeren ist und die Folie matt ist.

B 32 B - 27/40 91 16 632 A 41 D - 31/02

### Klasse B 41

B 41 F - 5/24 93 05 552 B 41 F - 7/06

- (51) B 41 F - 7/06 (11) DE 93 05 552 U 1  
(22) 16.04.93 (47) 03.06.93 (43) 15.07.93  
(54) Einrichtung zum Inline-Beschichten von Bedruckstoffen in Offsetdruckmaschinen  
(71) MAN Roland Druckmaschinen AG, 6050 Offenbach, DE  
(74) Marek, J., Dipl.-Ing., Pat.-Ass., 6053 Obershausen  
(51) B 41 F - 5/24 B 41 F - 31/06  
B 41 F - 9/10 B 41 F - 9/16  
B 05 C - 1/08  
(57) 1. Einrichtung, vorzugsweise in Bogenrotationsdruckmaschinen für mehrfarbigen Offsetdruck, zum Beschichten von Bedruckstoffen mit wenigstens zwei Lackiereinheiten, dadurch gekennzeichnet, daß jede Lackiereinheit einen Druckzylinder (8), einen Formzylinder (10) und eine Auftragwalze (11, 14) enthält und die entsprechend Bogenlaufrichtung vorgeordnete Lackiereinheit als Flexodruckwerk (6) ausgebildet ist.



B 41 F - 9/10 93 05 552 B 41 F - 7/06

- (51) B 41 F - 9/10 (11) DE 92 18 039 U 1  
(22) 25.04.92 (47) 03.06.93 (43) 15.07.93  
(54) Rakelbalken für ein Kurzfarbwerk einer Rollenrotationsdruckmaschine  
(71) Koenig & Bauer AG, 8700 Würzburg, DE  
(57) 1. Rakelbalken für ein Kurzfarbwerk einer Rollenrotationsdruckmaschine, welcher unterhalb einer Rasterwalze angeordnet und in vertikaler Richtung an den Rakelbalken anstellbar ist, und dessen Rakelblätter einen negativen Anstellwinkel aufweisen, dadurch gekennzeichnet, daß zumindest ein Rakelblatt (2) in einer rasterwalzenfernen Stellung gegen die Kraft von Federn (31) arretierbar ist.

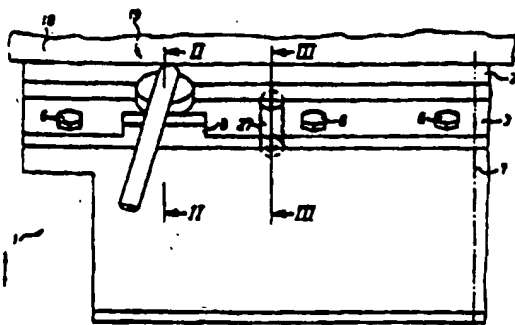
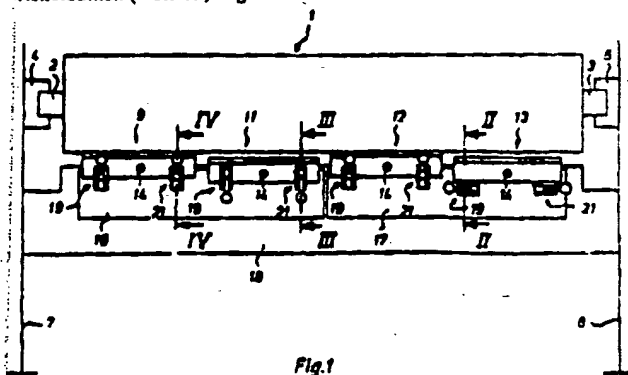


Fig. 1

- (51) B 41 F - 9/10 (11) DE 92 18 053 U 1  
(22) 25.04.92 (47) 03.06.93 (43) 15.07.93  
(54) Einrichtung zum Festklemmen und Anstellen eines Rakelbalkens an eine farbabgebende Walze einer Rollenrotationsdruckmaschine  
(71) Koenig & Bauer AG, 8700 Würzburg, DE  
(51) B 41 F - 13/08  
(57) 1. Einrichtung zum Festklemmen und Anstellen eines Rakelbalkens an eine farbabgebende Walze, z.B. Rasterwalze, einer Rollenrotationsdruckmaschine, dadurch gekennzeichnet, daß ein drehbar in einer gestellfesten Rakelbalckenhalterung (22; 23) angeordneter Körper (24) eine abgewinkelte Gabel (26; 27) mit zwei Armen (26; 27) aufweist, daß in den Enden der Arme (26; 27) ein Bolzen (28) gelagert ist, auf dem ein zweiarmliger Hebel (29) angeordnet ist, der an seinem ersten Ende einen Anschlag (31) und an seinem zweiten Ende einen Exzenter (32) aufweist, daß der Exzenter (32) gegen eine Frontseite (74) des Rakelbalkens (9 bis 13) preßbar ist, daß ein auf die Hinterseite (76) des Rakelbalkens (9 bis 13) wirkendes Druckfederstück (63) vorgesehen ist, daß ein hinterer Anschlag (23) als Gegenlager für den Rakelbalken (9 bis 13) angeordnet ist.



B 41 F - 9/16 93 05 552 B 41 F - 7/06  
B 41 F - 13/08 92 18 053 B 41 F - 9/10  
B 41 F - 13/08 92 18 057 B 41 F - 13/10

- (51) B 41 F - 13/08 (11) DE 92 18 056 U 1  
(22) 21.04.92 (47) 03.06.93 (43) 15.07.93  
(54) Vorrichtung zum Erzeugen eines druckenden Musters auf einer Druckform-Hülse  
(71) Alben-Frankenthal AG, 6710 Frankenthal, DE  
(51) B 41 F - 13/10

- (57) 1. Vorrichtung zum Erzeugen eines druckenden Musters auf einem Mantel einer Druckform-Hülse mittels einer Einrichtung zur Erzeugung von kleinen, Druckfarbe transportierenden Stellen auf dem Mantel, wobei die Druckform-Hülse auf einen Zylinder aufgedrückt wird, dadurch gekennzeichnet, daß ein innerer Umfang der Druckform-Hülse (4) größer als ein Durchmesser des Zylinders (8) ist.

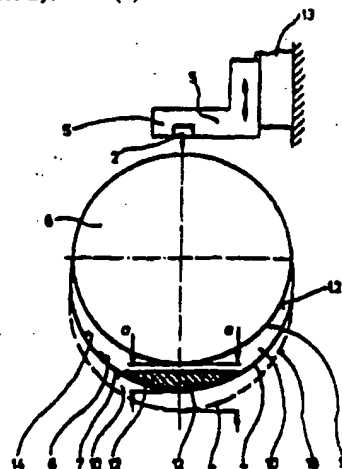


Fig. 1

B 41 F - 13/10 92 18 056 B 41 F - 13/08

GWK Gesellschaft Wärme Kältetechnik mbH,  
5883 Kierspe, DE

B29C 51/08 GM 92 15 136

B31D 5/02

B31F 1/12

B31F 1/36

B31B 43/00

B31B 1/00

B65D 65/40

AT 06.11.92 ET 03.06.93 BT 15.07.93

Akz: G 92 15 136.1

Anlage zur Herstellung von Formkörpern  
aus einem verformbaren Folienmaterial  
o.dgl.

LMG Rotopack GmbH, 7000 Stuttgart, DE  
R

B29C 51/42 GM 93 04 203

AT 20.03.93 ET 03.06.93 BT 15.07.93

Akz: G 93 04 203.5

Vorrichtung zum Erwärmen von  
Tiefziehfolien

Hemmerle Maschinen- und Werkzeugbau,  
7951 Tannheim, DE

B29C 65/60 GM 93 04 246 B21J 15/50

B29C 67/12 GM 93 02 413 B29C 43/48

B30B 9/30 GM 92 17 343

B65F 1/14

AT 16.12.92 ET 03.06.93 BT 15.07.93

Akz: G 92 17 343.8

Blechrosenverdichtungsmaschine  
Huber, Max, 8058 Erding, DE

B31B 1/00 GM 92 15 136 B29C 51/08

B31B 1/62 GM 93 04 390 B31F 1/26

B31B 43/00 GM 92 15 136 B29C 51/08

B31D 5/02 GM 92 15 136 B29C 51/08

B31F 1/12 GM 92 15 136 B29C 51/08

B31F 1/26 GM 93 04 390

B31B 1/62

B31F 1/28

D21F 11/12

AT 23.03.93 ET 03.06.93 BT 15.07.93

Akz: G 93 04 390.2

Pr 23.03.92 IT MI 92 U 000265

Wellmaschine zur Herstellung von  
Wellpappe mit unterschiedlichen Profilen  
Ing. Terzaghi & de Castiglione Industriale  
S.p.A., Cernusco sul Naviglio, Milano, IT  
Vtr: Manitz, G., Dipl.-Phys. Dr.rer.nat.;  
Finsterwald, M., Dipl.-Ing. Dipl.-Wirtsch.-Ing.;  
8000 München; Rotermund, H., Dipl.-Phys.,  
7000 Stuttgart; Heyn, H., Dipl.-Chem.  
Dr.rer.nat., Pat.-Anwälte, 8000 München

B31F 1/28 GM 93 04 390 B31F 1/26

B31F 1/36 GM 92 15 136 B29C 51/08

B32B 3/24 GM 93 03 118 B32B 11/10

B32B 7/12 GM 91 16 632 A41D 31/02

B32B 11/10

GM 93 03 118

B32B 3/24

B32B 27/06

B32B 15/08

D06N 7/00

E04D 5/10

E04B 1/66

C09K 3/10

AT 04.03.93 ET 03.06.93 BT 15.07.93

Akz: G 93 03 118.1

IP 05.02.93 DE 93 01 569.0

Rollbare Abdichtbahn für insbesondere  
Dächer

Roland-Werke Dachbaustoffe u. Bauchemie  
GmbH & Co KG, 2807 Achim, DE

B32B 15/08 GM 93 03 118 B32B 11/10

B32B 27/06 GM 93 03 118 B32B 11/10

B32B 27/12 GM 91 16 632 A41D 31/02

B32B 27/18 GM 93 05 684 B32B 27/32

B32B 27/32 GM 93 05 684

B32B 27/18

AT 17.04.93 ET 03.06.93 BT 15.07.93

Akz: G 93 05 684.2

Matte Transformatorenisolierungsfolie  
Hoechst AG, 6230 Frankfurt, DE

B32B 27/40 GM 91 16 632 A41D 31/02

B41F 5/24 GM 93 05 552 B41F 7/06

B41F 7/06 GM 93 05 552

B41F 5/24

B41F 31/06

B41F 9/10

B41F 9/16

B05C 1/08

AT 16.04.93 ET 03.06.93 BT 15.07.93

Akz: G 93 05 552.8

Einrichtung zum Inline-Beschleiten von  
Bedruckstoffen in Offsetdruckmaschinen  
MAN Roland Druckmaschinen AG, 6050  
Offenbach, DE

B41F 9/10 GM 92 18 039

AT 25.04.92 ET 03.06.93 BT 15.07.93

AT aus P 42 13 663.6

Akz: G 92 18 039.6

Rakelbalken für ein Kurzfarbwerk einer  
Rollendruckmaschine  
Koenig & Bauer AG, 8700 Würzburg, DE

B41F 9/10 GM 92 18 053

B41F 13/08

AT 25.04.92 ET 03.06.93 BT 15.07.93

AT aus P 42 13 670.9

Akz: G 92 18 053.1

Einrichtung zum Festklemmen und  
Anstellen eines Rakelbalkens an eine  
farbabgebende Walze einer  
Rollendruckmaschine  
Koenig & Bauer AG, 8700 Würzburg, DE

B41F 9/10 GM 93 05 552 B41F 7/06

B41F 9/16 GM 93 05 552 B41F 7/06

B41F 13/08 GM 92 18 053 B41F 9/10

B41F 13/08

GM 92 18 056

B41F 13/10

AT 21.04.92 ET 03.06.93 BT 15.07.93

AT aus P 42 13 013.1

Akz: G 92 18 056.6

Vorrichtung zum Erzeugen eines  
druckenden Musters auf einer  
Druckform-Hölse

Albert-Frankenthal AG, 6710 Frankenthal, DE

B41F 13/08 GM 92 18 057 B41F 13/10

B41F 13/10 GM 92 18 056 B41F 13/08

B41F 13/10 GM 92 18 057

B41F 13/08

AT 21.04.92 ET 03.06.93 BT 15.07.93

AT aus P 42 13 012.3

Akz: G 92 18 057.4

Rollendruckmaschine - Druckwerk  
Albert-Frankenthal AG, 6710 Frankenthal, DE

B41F 16/02 GM 92 01 247 D06C 23/00

B41F 17/00 GM 93 03 439

B41M 1/40

AT 09.03.93 ET 03.06.93 BT 15.07.93

Akz: G 93 03 439.3

Tampendruckmaschine

Tampoprint GmbH, 7015

Kornal-Münchingen, DE

R

B41F 23/04 GM 91 16 646

B41F 25/00

AT 07.06.91 ET 03.06.93 BT 15.07.93

AT aus P 41 18 807.1

Akz: G 91 16 646.2

Vorrichtung zur Erhöhung des  
Wärmeübergangs an Kühlwalzen von  
Offset-Rollenrotationsmaschinen  
Eltex-Elektrostatik GmbH, 7858 Weil, DE

B41F 25/00 GM 91 16 646 B41F 23/04

B41F 31/06 GM 93 05 552 B41F 7/06

B41J 2/455 GM 93 05 092 G03G 15/08

B41J 5/10 GM 93 02 619 G06F 3/023

B41L 11/00 GM 93 05 092 G03G 15/08

B41M 1/40 GM 93 03 439 B41F 17/00

B42C 9/02 GM 93 04 504

B05C 1/08

AT 26.03.93 ET 03.06.93 BT 15.07.93

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